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## NOTES.

In *Oversigt over det Kongelige Danske Videnskabernes Selskabs Forhandlinger, Juni 1919–Maj 1920*, Copenhagen, 1920, there is a sketch of H. G. ZEUTHEN (1839–1920) by A. C. Juel, pp. 67–77, accompanied by a splendid portrait-plate.

G. H. HARDY'S remarkably interesting biography of Ramanujan, to which we have already referred more than once (1921, 458; 1922, 19), is reprinted in *The Journal of the Indian Mathematical Society*, June, 1922.

In *The Cyclopædia of American Biography, new enlarged edition of Appleton's Cyclopædia of American Biography*, volume 9 (New York, The Press Association Compilers, Inc., 1922), there are biographies of EMORY MCCLINTOCK (see 1916, 271; 1918, 228), page 15, E. C. PICKERING (1919, 134), 329, and T. J. J. SEE, 363.

In *The Encyclopædia and Dictionary of Education* edited by Foster Watson, 4 volumes (paged consecutively), London, Pitman, 1921–1922, the following mathematical topics, among others, are treated: Teaching of algebra, Alligation, Approximation, Arabic notation, Arithmetic, Averages, Axiom, Binomial theorem, Calculating machines by G. H. BRYAN, Casting out nines, Checks on computation, Cocker's arithmetic, Teaching of commercial arithmetic, Teaching of conic sections, Convergence, Decimal coinage, Finger manipulation, Non-Euclidean geometry, Teaching of geometry, Cartesian geometry, Graphs and graphic curves, The Grube method, Logical and historical schools of mathematics (modern) by P. E. B. JOURDAIN, Teaching of machine drawing, Significance of mathematical theory by G. H. BRYAN, History of mathematics by W. W. R. BALL, Metric system, Napier's rods (or Napier's bones), Teaching of projective geometry by J. L. S. HATTON, Drawing of sections, Tillich's bricks, and Trigonometry.

The following quotation from an article by Professor JAMES HENRY BREASTED of Chicago University is of interest to students of the history of mathematics. Professor Breasted refers indirectly to an article by Professor L. C. KARPINSKI, "Algebraical developments among the Egyptians and Babylonians", which appeared in this MONTHLY, 1917, 257–265. The quotation is taken from an article on The Edwin Smith Papyrus which appears in the current number of the *Bulletin of the New York Historical Society*.

"The current conclusion regarding the mind of the ancient Egyptian, a conclusion in which I have myself heretofore shared, has been that he was interested in scientific principles, if at all, solely because of the unavoidable necessity of applying them in practical life; that if he discussed the superficial content of a many-sided geometrical figure or the cubical content of a hemisphere it was because he was obliged to measure fields for taxation purposes and to compute the content of granaries. In the field of Egyptian mathematics Professor Karpinski of the University of Michigan has long insisted that the surviving mathematical papyri clearly demonstrate the Egyptians' scientific interest in pure mathematics for its own sake. I have now no doubt that Professor Karpinski is right, for the evidence of interest in pure science, as such, is perfectly conclusive in the Edwin Smith Medical Papyrus."

The first edition of the first volume of ARNE FISHER, *The Mathematical Theory of Probabilities and its Application to Frequency Curves and Statistical Methods*, appeared in 1915 (New York, Macmillan). The second edition of this volume (1922), enlarged by more than one hundred pages of new material, treats

of Mathematical probabilities, frequency curves, homograde and heterograde statistics. Mr. Fisher proposes to treat the methods of Pearson, Edgeworth, Kapteyn, Bachelier, and Knibbs, and to show their relation to Laplace's theory, in the second volume. Macmillan announced for publication in August, 1922, Arne Fisher, *An Elementary Treatise on Frequency Curves and their Application to the Construction of Mortality Tables* (225 + 15 pages).

We have already listed (1920, 218; 1921, 269) fifteen of the volumes of the great edition of Euler's *Opera Omnia* now being issued under the auspices of the Swiss Society of Naturalists. Three more volumes have recently been published: (a) series I, volume 6: *Commentationes algebraicae ad theoriam aequationum pertinentes*, edited by F. RUDIO, A. KRAZER and P. STÄCKEL, 1921; (b) series I, volume 7: *Introductio in Analysin Infinitorum*, tome primus, edited by F. RUDIO, 1922; (c) series II, volume 14: *Neue Grundsätze der Artillerie . . . aus dem Englischen des . . . Benjamin Robins übersetzt und mit den nöthigen Erläuterungen und vielen Anmerkungen versehen von Leonhard Euler*, edited by F. R. SCHERRER, 1922.

Many readers will recall *The First Book of Geometry* (London, Dent, 1905; 16 + 222 pp.) written by GRACE CHISHOLM YOUNG, with the assistance of her husband W. H. YOUNG, for the use of her children. An attractive German edition by S. and F. Bernstein was issued by Teubner in 1908 (16 + 239 pp.). In 1921 a Hebrew translation by Dr. Elias Olschwanger was published by Wostock of Dresden (14 + 187 pp.; price, in Germany, bound, 67 marks).

This work is often referred to in connection with another publication appearing about the same time, namely C. A. LAISANT'S notable little book: *L'Initiation mathématique, ouvrage étranger à tout programme; dédié aux amis de l'enfance* (Paris, Hachette, 1906). Among various translations of it into other languages, an English edition appeared in 1913 (with the title *Mathematics*, London, Constable). Compare 1920, 339, 498. W. H. Young is now professor of mathematics at University College, Aberystwyth, Wales.

The first half of the second edition of the Geometry volume of the admirable and most useful *Repertorium der höheren Mathematik*, edited by H. E. TIMERDING, was published by Teubner in 1910. This contained 24 chapters devoted to foundations and plane geometry. The second part on space geometry appeared in February, 1922 (chapters 25-42, pages 12 + 537-1165; price, in Germany, 96 marks, bound). O. STAUDE, of Rostock, is author of the first five chapters on surfaces of the second order and gauche curves of the third and fourth order. Six chapters are written by L. BERZOLARI, of Pavia, on the general theory and geometry of algebraic surfaces, surfaces of the third order, general theory of algebraic space curves, and special algebraic curves. TIMERDING, of Braunschweig, contributes the chapters on special surfaces of the fourth order, and on rational transformations of curves. K. ZINDLER, of Innsbruck, wrote the chapter on line geometry, and E. SALKOWSKI, of Hannover, contributed the chapters on space curves and developable surfaces, general theory of surfaces, and special classes of surfaces and systems of surfaces. The "Register" occupies pages 1134-1161, and "Berichtigungen und Zusätze," pages 1162-1165.

One of the most useful reference works for the mathematician is J. C. Poggendorff's *Biographisch-literarisches Handwörterbuch zur Geschichte der exacten Wissenschaften* of which volumes 1-2, covering the literature through 1857, appeared in 1863; the third volume, for the period 1858-1882, edited by B. W. Feddersen and A. J. von Oettingen was published in 1898; and the fourth volume, 1904, edited by Oettingen, 1883-1903. The manuscript of a fifth volume for 1904-1922 is now in course of preparation. Appeal has been made by the editors for information to be sent to them, at the earliest possible moment, addressed: Poggendorff-Büro, Beethovenstrasse 6 (Universitäts-Bibliothek), Leipzig, Germany. The information requested is as follows: surname and first names really used; "consanguineous relations of interest to science"; degrees and when and where obtained; address; year, month, day and place of birth; present and former positions with dates of appointment; "Emeritus? Retired? Since when?" Are you editor of a periodical? instruments invented or special achievements and year of publication or finishing; titles of books published by the author, either alone or in collaboration with other, stating year and place of publication of each work, its size as well as the total number of pages; titles of those articles and papers in the domain of the exact sciences which have appeared in periodicals or proceedings of Societies since 1903,—in each case indicating the periodical, the volume, the year of publication and total number of pages of the article.

#### ARTICLES IN CURRENT PERIODICALS.

**JAHRESBERICHT DER DEUTSCHEN MATHEMATIKER-VEREINIGUNG**, volume 30, nos. 9-12, 1921: "Johannes Thomae" by H. Liebmann, 133-144; "Über paraboloidische Flächen" by P. Franck, 145-151; "Das Problem der 36 Offiziere" by H. F. MacNeish, 151-153; "Über stetige Funktionen mit überalldicht divergierender Fourierreihe" by L. Neder, 153-155; "Eine algebraische Behauptung von Gauss. II" by A. Loewy, 155-158; "Das Abelsche Gleichungsproblem bei Euler" by S. Breuer, 158-169; "Über die Hardy-Littlewoodschen Arbeiten zur additiven Zahlentheorie" by E. Landau, 179-185.

**JOURNAL OF THE INDIAN MATHEMATICAL SOCIETY**, volume 14, February, 1922: "Focus-acnodal cubic" by P. Hemraj, 3-13; "On a particular type of similar triangles" by F. H. V. Gulasekharan, 14-18.

**MATHEMATICAL GAZETTE**, volume 11, March, 1922: "The structure of the atom" by J. W. Nicholson, 37-42; "Vectors" by C. Godfrey, 43-44—May: "Differential equations in mechanics and in physics" by A. R. Forsyth, 73-81 [Presidential address.]

**MATHEMATICS TEACHER**, volume 15, March, 1922: "The psychology of the equation" by E. L. Thorndike, 127-136; "Reaction vs. radicalism in the teaching of mathematics" by G. W. Myers, 137-146; "The definition of similarity" by G. W. Evans, 147-151; "The place of elementary calculus in senior high school mathematics" by N. B. Rosenberger, 152-156; "Experimental geometry" by G. A. Harper, 157-163; "How can I bring the soul of mathematics to my pupils?" by A. H. Huntington, 164-171; "Papers by pupils of the plane geometry classes of Fullerton Union High School" by Lena E. Reynold, 172-181; Discussion, 182-184; New books, 185-188; News and notes, 189-190—April: "Functionality in mathematical instruction in schools and colleges" by E. R. Hedrick, 191-207; "Calculus for schools" by W. H. Tyler, 208-211; "The psychology of problem solving" by E. L. Thorndike, 212-227 (to be concluded); "Cultural value of mathematics" by M. G. Kane, 228-236; Discussion, 237-240; News and notes, 241-245; "The Chicago meeting of the National Council of Teachers of Mathematics," 246-251; Research department, 251-252—May: "The psychology of problem solving" (conclusion) by E. L. Thorndike, 253-264; "The teaching of beginning geometry" by A. J. Schwartz, 265-282; "The origin of mathematics—a first lesson in secondary mathematics" by W. Betz, 283-293; "Robert Recorde" by F. Cajori, 294-302; "A list of reference books and magazines for teachers of mathematics" by W. D. Reeve, 303-307; Discussion, News and notes, etc., 307-316.